



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,974	11/13/2003	Seigo Kodama	245435US2	6782
22850	7590	12/27/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			YAM, STEPHEN K	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b> 10/705,974	<b>Applicant(s)</b> KODAMA ET AL.	
	<b>Examiner</b> Stephen Yam	<b>Art Unit</b> 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 5-9 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 11 and 12 is/are allowed.
- 6) ☒ Claim(s) 1 and 10 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0204</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 5-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on October 27, 2005.

2. Applicant's election with traverse of group I in the reply filed on October 27, 2005 is acknowledged. The traversal is on the ground(s) that any search of the elected claims would also include the classes and subclasses appropriate for searching the non-elected claims. This is not found persuasive because Examiner contends that the search for Group I does not require the search of the unique components disclosed in Group II such as the rotary head capable of rotationally indexing plural spindles for taking out components.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Objections***

3. Claims 2 and 3 are objected to because of the following informalities:  
In Claim 2, lines 13-14 and Claim 3, line 15, "visual filed" should be replaced with "visual field".  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Oyama et al. US Patent No. 6,563,530.

Regarding Claims 1 and 10, Oyama et al. teach (see Fig. 1 and 7) a calibration method in an electronic component mounting apparatus having a circuit board transfer device (3) mounted on a base frame (2) for performing the loading, unloading and positioning of circuit boards (see Col. 7, lines 48-67), a movable table (8a, 12) supported on the base frame to be movable in two directions of X and Y directions (see Col. 6, lines 63-65), a component placing device (25) installed on the movable table for taking out components supplied by a component supply device (19) (see Col. 8, lines 1-12) and mounting the components on the circuit board positioned on the circuit board transfer device (see Col. 7, lines 26-37), a board recognizing camera (11) fixed on the movable table (see Col. 7, lines 2-5), and a component recognizing camera (13) fixed on the base frame (see Fig. 1 and Col. 7, lines 5-8), the method comprising the steps of providing a reference mark (on (40)) (see Col. 8, lines 51-57 and Col. 8, line 66 to Col. 9, line 15) on the base frame (on (31)) to reside in the visual field of the component recognizing camera (see Col. 12, line 65 to Col. 13, line 16), positioning the movable table to a predetermined position (32) (see Col. 13, lines 33-52) relative to a coordinate origin (location of (32)) to make the reference mark come in the visual field of the board recognizing camera, and calculating (see Col. 13, line

65 to Col. 14, line 38) a positional relation between optical axes of the board recognizing camera and the component recognizing camera when the movable table is positioned at the predetermined position, based on respective positional relations of the reference mark relative to the optical axes of the component recognizing camera and the board recognizing camera, the respective positional relations being detected by the component recognizing camera and the board recognizing camera (see Col. 14, line 62 to Col. 15, line 5). As the limitation of the component placing device being replacable with another component placing device different in performance does not limit the calibration method or the calibration device, the limitation cannot be given patentable weight.

*Allowable Subject Matter*

6. Claims 4 and 11-12 are allowed over the prior art of record
7. Claims 2 and 3 would be allowable if rewritten or amended to overcome the claim objections set forth in this Office action.
8. The following is a statement of reasons for the indication of allowable subject matter:  
  
Regarding Claims 2 and 3, the invention as claimed, specifically in combination with positioning the movable table to make the reference mark come in the visual field of the board recognizing camera and at the same time, to make the end of a component pick-up portion of the component placing device come in the visual field of the component recognizing camera; and calculating a positional relation between the board recognizing camera and a center line of the

component pick-up portion based on positional relations of the reference mark and the center line of the component pick-up portion relative to an optical axis of the component recognizing camera which relations are detected by the component recognizing camera, is not disclosed or made obvious by the prior art of record.

Regarding Claims 4 and 11, the invention as claimed, specifically in combination with positioning the movable table to a second position to make the end of a component pick-up portion of the component placing device come in the visual field of the component recognizing camera and detecting a positional relation between the optical axis of the component recognizing camera and a center line of the component pick-up portion by the use of the component recognizing camera, and calculating a positional relation between the optical axis of the board recognizing camera and the center line of the component pick-up portion based on the positional relation between the optical axis of the component recognizing camera and the center line of the component pick-up portion detected with the movable table being positioned at the second position, is not disclosed or made obvious by the prior art of record.

### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakahara et al. US 6,550,135, Nakahara US 6,216,341, Okuda et al. US 6,876,761, and Uchiyama et al. US 6,785,008, teach similar systems with a board recognizing camera and a component recognizing camera.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SY

SY

  
THANH X. LUU  
PATENT EXAMINER